

ABSTRACT

[0058] A method of forming resistance changing elements with improved operational characteristics for use in memory devices and the resulting structures are disclosed. A chalcogenide glass having the formula $(\text{Ge}_{x_1}\text{Se}_{1-x_1})_{1-y_1}\text{Ag}_{y_1}$, wherein $18 \leq x_1 \leq 28$, or the formula $(\text{Ge}_{x_2}\text{Se}_{1-x_2})_{1-y_2}\text{Ag}_{y_2}$, wherein $39 \leq x_2 \leq 42$, and wherein in both the silver is in a concentration which maintains the germanium selenide glass in the glass forming region is used in a memory cell. The glass may also have a glass transition temperature (T_g) near or higher than typical temperatures used for fabricating and packaging memory devices containing the memory cell.